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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,417

09/30/2003

Masahiro Yamanaka

SIC-02-009-1

8051

29863

7590

12/18/2006

DELAND LAW OFFICE

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EXAMINER

LUONG, VINH

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 12/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/676,417
Filing Date: September 30, 2003
Appellant(s): YAMANAKA, YAMANAKA

MAILED

DEC 18 2006

GROUP 3600

James A. Deland
For Appellant

SUPPLEMENTAL EXAMINER'S ANSWER

Pursuant to the remand under 37 CFR 41.50(a)(1) by the Board of Patent Appeals and Interferences on October 26, 2006 **for further consideration of a rejection**, a supplemental Examiner's Answer under 37 CFR 41.50(a)(2) is set forth below:

(1) Grounds of rejection to be reviewed on appeal

Pursuant to the Board's mandate in the decision on October 26, 2006, the following new grounds of rejections are made:

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A. Claims 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards (GB 267,796) in view of Ernest (GB 356,497).

B. Claims 43-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards in view of Ernest as applied to claim 35 above, and further in view of Yamanaka (EP 0756 991 A2 cited in the record).

(2) Evidence Relied Upon

The following is a listing of the evidence relied upon in the rejection of claims under appeal.

267,796	Richards (United Kingdom)	03-1927
356,497	Ernest (United Kingdom)	09-1931
EP 0 756 991 A2	Yamanaka	02-1997

(3) New grounds of rejection

The following grounds of rejection are applicable to the appealed claims:

A. Claims 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards (GB 267,796) in view of Ernest (GB 356,497).

Regarding claim 35, the Board sets forth that Richards discloses a bicycle crank axle 11 adapted to be rotatably mounted within wheel hub 1, which is mounted between the front forks 2 of the bicycle. *Ibid.* page 2, lines 30-35 and 79-102. The crank axle 11 includes an axle body having first and second end portions. *Ibid.* Figs. 1 and 2. A portion of the crank axle 11 forms a projection (unnumbered, *i.e.*, head of bolt 11. See Attachment 1, hereinafter "Att. 1") extending radially outwardly from one of the first and second end portions of the axle body, wherein the projection is dimensioned and positioned to be located externally of the wheel hub 1 and the

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front forks 2 (Fig. 2) so as to abut against a laterally outer side surface of a bicycle crank arm 7 to prevent the crank arm 7 from moving axially outwardly. *Ibid.* page 2, lines 32-33. The axle body 11 of Richards is dimensioned so that the crank arm 7 that abuts against the projection (*i.e.*, the bolt head) is mounted to the projection by passing the other one of the first and second end portions of the axle body 11 through the crank arm 7 and passing the axle body 11 through the crank arm 7 until the crank arm 7 is mounted to the projection (*i.e.*, the bolt head). *Ibid.* page 2, line 114 – page 3, line 10. As described in one embodiment of Richards, the head of bolt 11 abuts the outer surface of crank arm 7 and the opposite threaded end of bolt 11 is received by complimentary threads in crank arm 7a. *Ibid.* page 2, lines 7-8 (teaching that nut element 12 may form a part of the crank). Richards teaches that the assembly “enable[s] the parts to be disassembled for transit purposes and readily assembled at their destination.” *Ibid.* page 1, lines 16-19, and page 2, lines 40-43.

Richards discloses every element of claim 35 except for the crank axle being supported within a bottom bracket of a bicycle frame such that “the projection is dimensioned and positioned to be located externally of the bottom bracket.” Rather, Richards shows the crank axle being supported within a wheel hub 1 mounted between the front forks 2 of a tricycle or bicycle of the type in which the pedals are attached directly to the front wheels via a sprocket and chain assembly. *Ibid.* page 2, lines 30-35. As such, the projection of axle 1 of Richards is dimensioned and positioned to be located externally of wheel hub 1 and front forks 2 (see Fig. 2) rather than externally of a bottom bracket of a bicycle frame.

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Ernest discloses a crankshaft mechanism for bicycles in which one of the cranks is associated with a sprocket wheel. Ernest, page 2, lines 4-11. As such, the crankshaft of Ernest is disposed within a bottom bracket of the bicycle frame. See Fig. 1 (dashed lines).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used Richards' assembly to mount crank arms and pedals to a bottom bracket of a bicycle frame as taught by Ernest for ease of assembly and disassembly of the crank arms and pedals.

Regarding claim 36, Richards' projection (unnumbered, *i.e.*, head of bolt 11. See Att. 1) extends circumferentially along the axle body (at 11 in Fig. 1).

Regarding claim 37, Richards' projection (Att. 1) extends completely around the axle body (at 11 in Fig. 1).

Regarding claim 38, Richards' crank axle comprises a plurality of splines (at the head of the bolt 11. See Att. 1) disposed at the one of the first and second end portions of the axle body (at 11 in Fig. 1).

Regarding claim 39, Richards' splines (Att. 1) are disposed axially inwardly of the projection as seen in Figs. 1 and 2.

Regarding claim 40, Richards' splines (Att. 1) are located in close proximity to the projection (Att. 1).

Regarding claim 41, Richards' splines (Att. 1) extend radially outwardly from an outer peripheral surface of the axle body as seen in Fig. 1.

Regarding claim 42, Richards' splines extend radially from an outer peripheral surface (Att. 1) of the axle body (Att. 1)

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(B) Claims 43-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards in view of Ernest as applied to claim 35 above, and further in view of Yamanaka (EP 0756 991 A2 cited in the record).

Regarding claim 43, Richards and Ernest teaches the invention substantially as claimed. However, Richards teaches screw threads instead of the splines disposed at the other one of the first and second end portions of the axle body (Att. 1). In other words, Richards and Ernest teaches the splines at one end instead of both two ends of the axle body.

Yamanaka teaches the splines 51 disposed at both two ends of the axle body 52 in order to attach the axle 5 to two crank arms 1, 100 (Fig. 7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the splines at both two ends of Richards' axle body as modified by Ernest in order to attach Richards' axle as modified by Ernest to two crank arms as taught or suggested by Yamanaka.

Regarding claim 44, Yamanaka's splines 51 do not extend radially outwardly from an outer peripheral surface of the axle body 52. Note that claim 44 does not specifically recite "an outer peripheral surface *at one end* of the axle body." Therefore, Yamanaka's outer peripheral surface of the axle body 52 as shown in Attachment 2 "reads on" the claimed outer peripheral surface of the axle body.

Regarding claim 45, Yamanaka's splines 51 do not extend radially outwardly from an outer peripheral surface of the axle body 52 located axially inwardly of the splines 51 as shown in Att. 2.

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Regarding claim 46, Yamanaka teaches a threaded opening 53 at the other one of the first and second end portions of the axle body 52 in order to affix the crank arms 1. Yamanaka, column 4, line 58 – column 5, line 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the threaded opening at the other one of the first and second end portions of Richards' axle body as modified by Ernest in order to affix the crank arms as taught or suggested by Yamanaka.

Regarding claims 47-49, see regarding claims 43-45 above.

Regarding claim 50, Richards' projection is disposed at the first end portion of the axle body (11) and Richards' plurality of first splines (Att. 1) are disposed at the first end portion of the axle body (11). Moreover, Yamanaka teaches a plurality of second splines at the second end portion of the axle body as seen in regarding claim 43 above.

Regarding claim 51, Richards' first splines (Att. 1) are disposed axially inwardly of the projection (Att. 1).

Regarding claim 52, Richards' first splines (Att. 1) are located in close proximity to the projection (Att. 1).

Regarding claim 53, Yamanaka's second splines 51 do not extend radially outwardly from an outer peripheral surface of the axle body 52. Note that claim 53 does not specifically recite "an outer peripheral surface *at one end* of the axle body." Therefore, Yamanaka's outer peripheral surface of the axle body 52 as shown in Attachment 2 "reads on" the claimed outer peripheral surface of the axle body.

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Regarding claim 54, Yamanaka's second splines 51 do not extend radially outwardly from an outer peripheral surface of the axle body 52 located axially inwardly of the splines 51 as shown in Att. 2.

Regarding claim 55, Richards' projection (Att. 1) extends circumferentially along the axle body (Att. 1).

Regarding claim 56, Richards' projection (Att. 1) extends completely around the axle body (Att. 1).

(4) Response to argument

None of the arguments in the previous appeal brief apply to the new grounds of rejection.

(5) Other

The appellant must within **TWO MONTHS** from the date of the supplemental examiner's answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the rejection for which the Board has remanded the proceeding:

(a) **Reopen prosecution.** Request that prosecution be reopened before the examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit, or other evidence. Any amendment, affidavit, or other evidence must be relevant to the issues set forth in the remand or raised in the supplemental examiner's answer. Any request that prosecution be reopened will be treated as a request to withdraw the appeal. See 37 CFR 41.50(a)(2)(i).

(b) **Maintain appeal.** Request that the appeal be maintained by filing a reply

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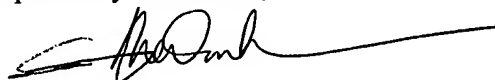
brief as set forth in 37 CFR 41.41. If such a reply brief is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened under 37 CFR 41.50(a)(2)(i). See 37 CFR 41.50(a)(2)(ii).

Extensions of time under 37 CFR 1.136(a) are not applicable to the **TWO MONTH** time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

CONCLUSION

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Vinh T. Luong

Primary Examiner

Conferees on November 29, 2006

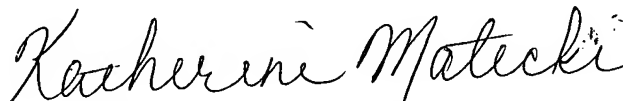
SPE Richard Ridley



Primary Examiner Thomas Hannon

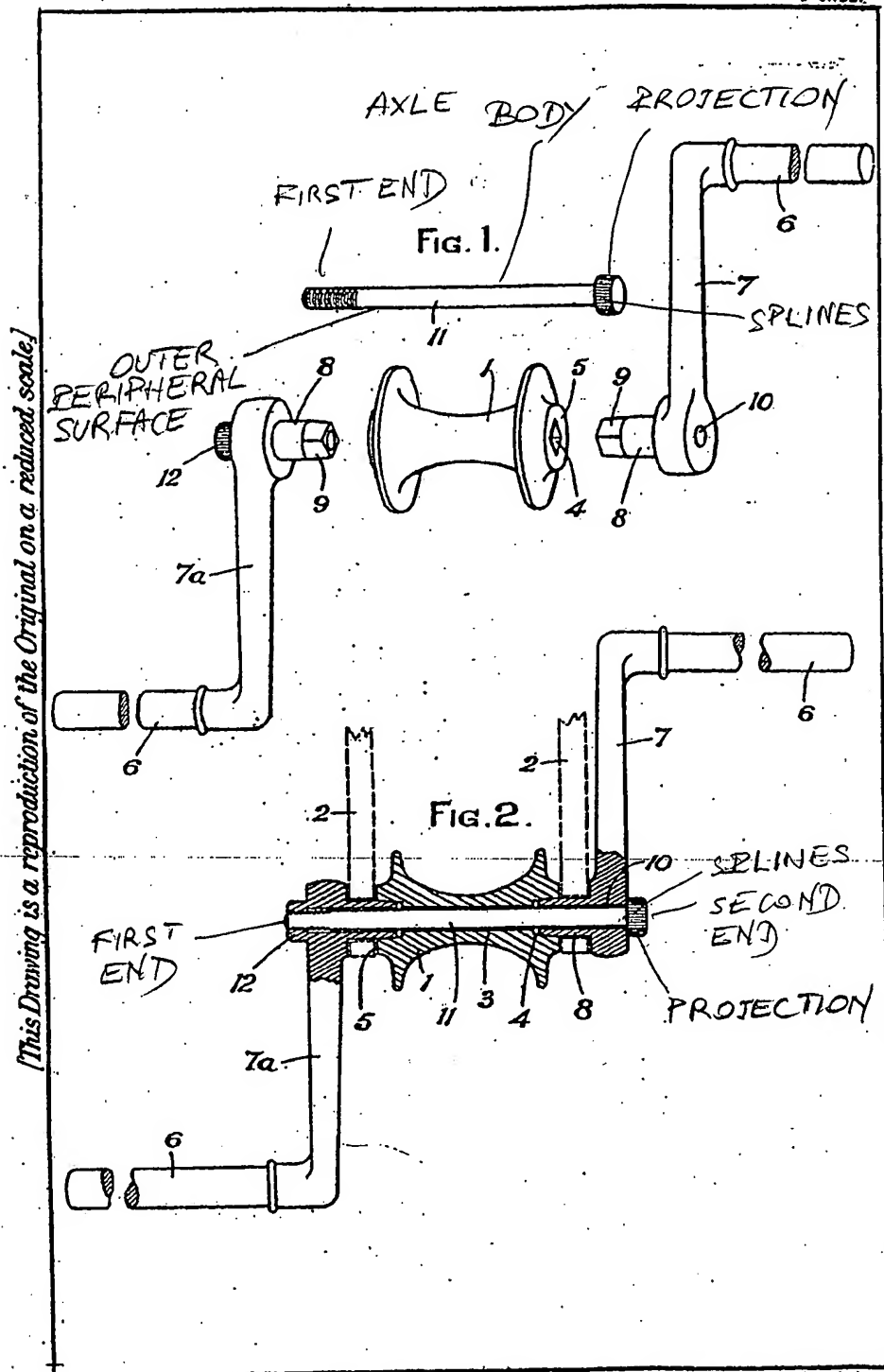


A Technology Center Director or designee has approved this supplemental examiner's answer by signing below:


ACTING DIRECTOR
TC 3600

DELAND LAW OFFICE
P.O. Box 69
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ATTACHMENT 1



ATTACHMENT 2

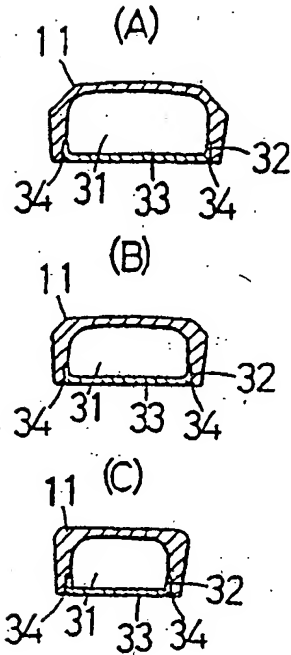


Figure 5

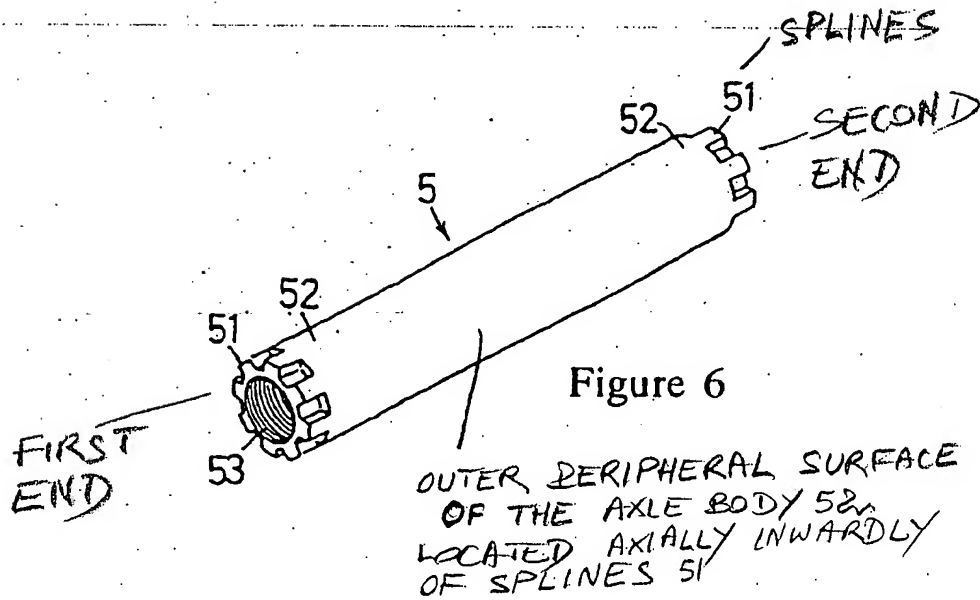


Figure 6